

## IN THE CLAIMS:

Please amend the claims as follows, without prejudice.

1. *(Currently Amended)* A process to produce a formed zeolite for adsorption purposes with improved adsorption and desorption properties comprising the following steps:

- a) mixing of at least one faujasite zeolite powder[, in particular a zeolite 13X powder or a zeolite LSX powder, with] a clay type binder, an inorganic phosphorous salt, and water [and, optionally, with an organic additive],
- b) producing [production of] a formed zeolitic body out of the mixture of step a), and
- c) drying and calcination of said zeolitic body produced in step b) to fix the binder and to get an [the active] adsorption reagent.

2. *(New)* The process of Claim 1 wherein the faujasite zeolite powder is selected from the group consisting of a zeolite 13X powder and a zeolite LSX powder.

3. *(New)* The process of Claim 1, wherein step a) includes the step of mixing an organic additive with the other materials mixed in step a).

4 [2]. *(Currently Amended)* The process of Claim 1, comprising after step c) a step of ion exchange.

5 [3]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the amount of clay binder is between 5 and 30 weight percent based on of the formed zeolitic body [weight].

6 [4]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the amount of clay binder is between 5 and 20 weight percent of the formed zeolitic body [weight].

7 [5]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the zeolite powder is at least 70 % in its sodium form.

8 [6]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the zeolite powder is at least 90% in its sodium form.

9 [7]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the zeolite powder is at maximum 30 % in its potassium form.

10 [8]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein a pore forming agent is added to the zeolite and binder mixture, [in particular a] the pore forming agent selected from the group consisting of Rayon fibers, Nylon fibers, Sisal fibers, [and] flax, and [as well as] organic polymers[, such as] selected from the group consisting of starch, starch derivatives, ligninsulfonates, polyacrylamides, polyacrylic acids, cellulose and cellulose derivatives.

11 [9]. *(Currently Amended)* The process of Claim 10 [anyone of the preceding claims], wherein the pore forming agent amounts to 2 to 15 weight percent [based on] of the formed zeolitic body [weight].

12 [10]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], wherein the inorganic phosphorous salt used in step a) [b)] is ~~a water soluble phosphorous salt, in particular~~ a phosphorous salt selected from the group consisting of tetrasodium diphosphate, tetrasodium polyphosphate, trisodium phosphate, disodium hydrogen phosphate, sodium dihydrogen phosphate, tripotassium phosphate, dipotassium hydrogen phosphate, and potassium dihydrogen phosphate or a mixture of two or more of said phosphorous salts.

13 [11]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], [where] wherein the amount of inorganic phosphorous salt is between 0.3 and 5.0 weight percent [based on the formed body weight] of the formed zeolitic body.

14 [12]. *(Currently Amended)* The process of Claim 1 [anyone of the preceding claims], [where] wherein the amount of inorganic phosphorous salt is between 0.3 and 3.0 weight percent [based on the formed body weight] of the formed zeolitic body.

15 [13]. *(Currently Amended)* An [a zeolitic] adsorption reagent [compound] obtainable according to the process of Claim 1 [anyone of the preceding claims].

16 [14]. *(Currently Amended)* A process to remove by adsorption one or more low molecular weight organic sulfur compounds from a gaseous or liquid stream, wherein the feed stream is passed through a bed of [formed zeolitic molecular sieve] adsorption reagent produced by the method according to Claim 1 [13].

17 [15]. *(Currently Amended)* The process of Claim 16 [14], wherein the organic sulfur compounds are one or more low molecular weight mercaptans or sulfides.

18 [16]. *(Currently Amended)* The process of Claim 14 or 15 16, wherein the process to remove by adsorption is carried out with an adsorption temperature of [is at most] 60°C or lower.

19. *(New)* The process of Claim 17, wherein the process to remove by adsorption is carried out with an adsorption temperature of 60°C or lower.

20 [17]. *(Currently Amended)* A desorption process for the desorption of organic sulfur compounds from [a zeolitic] the adsorption reagent [compound] obtainable according to the process of Claim 1 [13], wherein the desorption is done by [a] heating

using a heating profile allowing the organic sulfur compounds to reach their equilibrium adsorption capacity at each temperature.

21 [18]. *(Currently Amended)* A desorption process[, in particular according to Claim 17], for the desorption of organic sulfur compounds from [a zeolitic] the adsorption reagent [compound] obtainable according to the process of Claim 1 [13], wherein the desorption is done by fast heating to a basic temperature of at most 200°C, preferably 100 to 150°C, in particular about 150°C, and then using a temperature halt at different temperature levels starting at the basic temperature.

22. *(New)* A desorption process according to Claim 21 wherein the desorption is done by fast heating to a basic temperature in the range of about 100°C to 150°C.

23. *(New)* A desorption process according to Claim 21, wherein the desorption is done by fast heating to a basic temperature of about 150°C.

24 [19]. *(Currently Amended)* A desorption process according to Claim 21 [18], wherein the halt time is at least 10 minutes at each temperature level.

25 [20]. *(Currently Amended)* A desorption process according to Claim 21 [18 or 19], wherein the temperature levels are at least 5°C and at most 50°C apart from each other.

26. *(New)* A desorption process according to Claim 24, wherein the temperature levels are at least 5°C and at most 50°C apart from each other.

27 [21]. *(Currently Amended)* A desorption process[, in particular] according to Claim 20 [17], of organic sulfur compounds from a zeolite adsorption compound of Claim 13, wherein the desorption is done by fast heating to a basic temperature of at most 200°C, preferably 100 to 150°C, in particular about 150°C, and then heating using a

~~temperature increase of less than 3°C per minute heating using a small temperature increase rate at temperature levels above the basic temperature.~~

28. *(New)* A desorption process according to Claim 27, wherein the desorption is done by fast heating to a basic temperature in the range of about 100°C to 150°C.

29. *(New)* A desorption process according to Claim 27, wherein the desorption process is done by fast heating to a basic temperature of about 150°C.

22. *(Canceled)*

30 [23]. *(Currently Amended)* The desorption process according to Claim 20 of anyone of Claims 17 to 22, wherein the maximum regeneration temperature is about 320°C heating profile has a maximum temperature of at most about 320°C.

31 [24]. *(Currently Amended)* The desorption process according to Claim 20 of anyone of Claims 17 to 23, wherein the adsorption reagent is regenerated to its active adsorption state using a regeneration [gas is a] material selected from the group consisting of dry natural gas, methane, liquified natural gas [liquids], hydrogen, nitrogen and [or] hydrocarbons.

32. *(New)* The desorption process according to Claim 27, wherein the adsorption reagent is regenerated to its active adsorption state using a regeneration material selected from the group consisting of dry natural gas, methane, liquified natural gas, hydrogen, nitrogen, and hydrocarbons.